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ECONOMIC ASPECTS

By H. PARKER WILLIS

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IN ALMOST all discussion of proposed changes of economic or social arrangements, not to speak of political readjustments, it is the question of relative costs and effect upon material welfare that eventually bring a determination. We may deplore this state of things as indicative of a lack of idealism, or we may feel that the truest idealism, in the long run, is that which makes most strongly for the well-being and happiness of the average man. It does not much matter how we analyze the causes for success or failure of movements—the fact remains; and is as already stated.

It is, therefore, essential, in forming a critical opinion of any new movement or plan of social or other reform, to inquire into its economic

aspects. If we do so, we find that the reason for the present inconvenient and ill-adjusted calendar arrangements is that they antedate the present business era. They have come down to us from a time when trade and economic life in general were organized upon a purely local basis. Localism was not only national, it was international. Different nations had different ways of measuring the lapse of time, establishing dates, assigning days and periods for rest and work. There was no very positive reason for standardization, and hence no very positive attempt to eliminate differences of practice.

Within the past fifty years, commerce has become internationalized while new methods of communication have greatly cut down differences of distance from a common market. Within the past twenty years new types of business organization have made it needful to compare time-costs and time-uses. Telephonic and telegraphic communication have rendered it desirable to have persons in different productive regions, and in different markets, working as nearly as possible at identical dates, with somewhat the same holidays and periods of rest.

Standardization in the use of time has thus become desirable, and with standardization has come recognition of the inconvenience of the present arrangement of the calendar, and a feeling that, if it could be placed upon a more economic basis, there would be far more uniformity of business practice throughout the world, while at home there would be at least a possibility of much better and less wasteful management. The result has been the present movement for calendar reform; and the endeavor to put it into effect in 1933 when, for various reasons, the trouble and inconvenience involved in making any considerable calendar change would be a minimum.

Coupled with the influences thus making for calendar reform at an early date, has been one which is often neglected—the statistical. Statistics has of late years grown tremendously in its useful service to business, and today few industries are without their statistical measures, most of which depend upon the development of time series. The difficulties growing out of irregularity of the calendar, in their disturbance of banking, finance, bookkeeping and accounting—indeed, of all the more fundamental activities of business, and the processes of standardizing and comparing these activities have developed a very powerful factor of purely technical sort, making in favor of thorough-going change in the division of our calendar year. It is easy to see how this element of demand has powerfully strengthened the general support which the movement has developed in the other directions already indicated.

And yet, just as this movement has seemed to be approaching a time when it was in a fair way to triumph, it has been recognized by the more thoughtful that, as in all reforms, there are two sides to the question. It

frequently happens, in reform movements, that advocates of some plan become so wrapped up in the central idea they are advocating, that they fail to admit the real obstacles to be overcome, and proceed with their general advocacy, but without inquiring sufficiently into the question whether their proposals will, in fact, afford an advantage sufficient to warrant the inconveniences of making a change. It is always regrettable to obtain the prevalence of any reform, either without true comprehension on the part of those to be affected by it, or without adequate provision for an acceptable substitute that will "work." Hence, by ironical coincidence, it not infrequently occurs that economic reforms, designed to remedy some admittedly evil condition, go into operation and become discredited, just because they have not been thought through, and so cause more trouble than they save. Thus they fail of their object, and are often thrown aside, or occasionally remain in force against the will of those who find it needful to submit to them.

What do these considerations teach with respect to calendar reform?

First of all, it is worth while to consider the main arguments in its favor. They are:

(1) Based on the cost, inconvenience, and annoyance of having stated meetings, or occurrences, or payments fall on different days of the week, and so have to be changed from time to time to adjust themselves to holidays and other irregularly recurring events.

(2) Inspired by the greater regularity and availability to be attained in monthly and other statistical comparisons, which now are thrown out of relation one to another by the variations in the length of months.

(3) Influenced by the presumably more regular and standardized character that might be given to seasonal trade arrangements.

(4) Strengthened (in some minds) by meretricious advantages or inducements held out by advocates of calendar reform; such, for instance, as the proposals that all national and other holidays be shifted to Mondays, so as to give a long "week end" to holiday-makers who would then be able to make more extended journeys than they can today.

There are various other considerations that do not fit accurately or exactly into this classification, but in general the grouping that has been made covers the main types of argument. The trouble with these arguments is obviously that they do not offer any substitute for present conditions that will ensure a better use of time, and a greater ease in calculating it. They merely suggest that a more perfect arrangement of methods of calculation would result in a more perfect convenience—a fact which may at once be granted but does not carry us far.

The fault in the present situation is that there seems to be under way a series of proposals which would largely increase the inconvenience of present arrangements; and, instead of simplifying them, would render

them more complex. This would be a backward kind of reform. For example, the establishment of a calendar year consisting of thirteen months would immediately add one-twelfth to the labor of the present monthly statement system, and would completely vitiate all statistical series heretofore calculated. How, for instance, would one who wished to compare clearing house figures for a new month, to be called "Sol" or by some other name, make comparison with the figures for the period which corresponded to "Sol" in 1913? He could do so only after an elaborate computation. New bookkeeping systems would have at once to be generally installed, and extensive changes in commercial law of various kinds would have to be instituted. How could these be effected with assurance, in our Federal commonwealth consisting of many states and a Federal government? Division of years into fractions, such as "quarters," formerly of three months each, would be impossible without fairly extended calculations of various sorts which would neutralize most or all of the added convenience produced by the change.

Indeed it may well be questioned whether the economic loss and increase of labor from such an alteration would not be far greater than the gain to be realized. This must decide us against calendar reform in the shape that is urged by many at present. A month is not "just a bad habit" as some one has superficially said. It is no more a bad habit than a yardstick or a quart bucket. What is a bad habit is the use of a bad month—an undesirable measure of length or of content. The issue of calendar reform is economic and it is essentially a question—not whether we need calendar reform—but whether we can get a calendar that will be economically more efficient than the one we now have.

The economics of the calendar reform proposal is dependent upon three fundamental considerations:

(1) Find a calendar system that will not destroy all existing comparisons, and so reduce still further the extent to which the average man is able and inclined to guide himself by past experience.

(2) Find a system that will be simpler and easier in operation than the present one, and will permit greater equity of relationship between those engaged in what the census calls "gainful pursuits"—practically the whole population.

(3) Find a system that will make it harder, not easier, for those who have economic bargains to make to impose their selfish wishes upon others.

It is evident that, to accomplish these ends, it is needful, first of all, to retain the general underlying structure of the present calendar. A twelve-month year is absolutely essential. In the same way, a seven day week is equally fundamental. The fathers of the French Revolution may have pleased themselves by changing the names of the months and of the days of the week but there is no gain but rather great economic

loss to be had from such trifling with the subject. It would be abstractly desirable were the number of days in the year an even number, but since it is not, the amount of recomputation introduced into calendar practice through reform should be kept to a minimum. It is not numerical or abstract uniformity in the calendar that is to be desired, but utility.

Analysis of the general groupings of the arguments for calendar reform furnished at an earlier point in this discussion shows that in many cases they are founded upon their own claims—that is to say, they assume the soundness of the argument which they are put forward to substantiate. No claim is more common for calendar reform, for instance, than the statement that the thirteen months' revision proposed by many would be "scientific," but no standards are set for the use of this term that are calculated to show what is the meaning of the word "scientific" in this connection. The statement that the assignment of various events to a date which would be identical every year, both numerically and in designated day of the week, and that this would be a great advantage to some interests, is offset by the already obvious fact that many persons actually prefer the present system of variation—and for substantial reasons which vary according to circumstances and relationships.

The truth of the matter is that the economic side of calendar reform being the controlling side, is dependent for its argument upon the assumption that there will be a saving in convenience, expense, and friction by the adoption of a given plan. This saving then remains to be demonstrated; and, when examined, many of the proposed calendar plans fall by the wayside because they do not afford evidence that the extensive changes they propose will lessen expense and trouble, but the reverse.

The specific requirements of calendar reform in order that such reform may be economic and helpful have already been indicated in principle, and now remain to be discussed in detail. Existing comparisons and bases of comparison must be disturbed as little as is possible, consistent with the real improvement of the calendar and the elimination of existing evils. This means not only the retention of the twelve-month basis for the calendar, but also the retention so far as possible of months corresponding in length and name with those now in use. The so-called International Fixed Calendar proposes to change the length of *every* month, making each one 28 days. The World Calendar, on the other hand, would alter the length of only one-half of the months, and would alter it (except in the case of February) by only one day. Comparisons roughly made between old and new Mays and Augusts, for example, would not be greatly changed—not more than present comparisons between old (present) Mays and Novembers. The statistical changes and recomputations necessitated by this plan would be far less—the economic advantages far greater—by this or any other plan that would minimize the changes necessitated

through alterations in the length of months. It is highly essential, of course, for economic argument in favor of any proposed project that it shall support fairness in the relations of buyers and sellers, employers and employed. A change in the number of months in the year would throw out of gear our whole system of monthly or quarterly wage payments, and would necessitate a readjustment all around, since the basis of bargaining would be altered. Vacation schedules would be greatly changed, and adjustment of the allotted time under the new plan to the time allotted under the old one would be subject to the vicissitudes of bargains, made with difficulty in the past and renewed with greater difficulty in the future under the new programme. Dates for paying quarterly and semi-annual obligations, and for making and paying commercial paper, would not correspond with the opening of months, and so would be thrown out of gear, though they would not suffer from a system in which no such drastic revision of all established customs was called for.

Finally, in the establishment of new arrangements or bargains between economic classes in the community, it is greatly to be feared that any change in the number of months used in the calendar would alter the basis of bargaining to a corresponding extent, and would accordingly weaken the factor in the bargain which was already weakest. There are many recurring economic bargains to be made which assume the traditional recognition of the month; and which would be likely to have another outcome if that recognition were to be surrendered or altered.

The situation may be summed up in the statement that, in this as in all reforms, the economics of the case call for the fewest and most simple changes that are absolutely requisite, in order to eliminate the evils that have been found under the old system to be actually existent. Anything more is merely a substitution of someone else's advantage or convenience for that of the great mass of the community. The fact that proposals for the introduction of a thirteen-month year have been the result of the use of a "work-plan" by various industrial concerns which is based upon months of equal length indicates the inspiration of much of the uneconomic though self-styled "scientific" advocacy of calendar reform. There is ample ground for calendar reform, but no ground for a reform that will help a few interests and hurt, or fail to benefit, others.

The economics of calendar reform consist in the introduction of proved economies designed to simplify calendar practice without hurting either scientific study and comparison of past statistical returns, or present-day commercial, financial, and employment interests. It involves not a constant harping upon the known and obvious defects of our present calendar but a definite demonstration of the saving to be made to *all* from the introduction of specified changes, one by one and line by line.

WHAT DOES BUSINESS WANT?

By JOHN T. MADDEN

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Aside from being at the head of two of the largest institutions of business education in the world, Dean Madden is a director of the Institute of International Finance, past president of the American Association of Collegiate Schools of Business, director of the American Society of Certified Public Accountants, etc. When the International Congress of Accountants met in New York in 1929, Dean Madden was chairman of the Program Committee. Calendar reform was on the program, and Prof. Irving Fisher of Yale read a paper in support of the 13-month calendar, which has since been widely reprinted as representative of American economic opinion. Referring Dean Madden to this paper by Prof. Fisher, The World Calendar Association inquired whether he thought that American business really wanted the 13-month calendar. Here is his reply:

I WISH to thank you for the interesting material on calendar reform which you have sent me. I particularly enjoyed re-reading the paper by Prof. Irving Fisher.

As to whether business wants the 13-month calendar, let us refer to Professor Fisher's article. He says that Mr. Eastman reported about 100 important manufacturing and merchandising concerns in this country using it for their interior accounting. Now there are perhaps about 2,000,000 business organizations, large and small, in the United States. If only 200 are using the 13-month calendar, the percentage is 1-100th of 1 per cent. I understand Mr. Eastman's latest figure is 140. Does this indicate that Business wants the 13-month calendar?

Add to this the consideration that the 13-month calendar is not a modern invention but hundreds of years old. According to the Journal of Calendar Reform, more than one 13-month proposal was considered and rejected on the occasion of a prize contest conducted by the French Astronomical Society in 1887 under the presidency of Camille Flammarion. Inasmuch as Flammarion was not only a great scientist but also a popular writer, my guess would be that the 13-month calendar must have had fairly wide publicity.

If this be so, then the 13-month calendar was well advertised before the birth of modern advertising, before the modern conception of accounting, before the rise of corporate industrialism. Why did it not flourish along with these other phases of modern business?

The idea of the 13-month calendar is older than the industrial revolu-

tion, older than Shakespearian English, older than printing with movable type. Why was it not developed?

Whatever the reason may be, it probably applies to all calendar reform. And the reason is, perhaps, that there is mighty little demand for calendar reform, that Business does not, consciously and actively, want calendar reform.

As to whether Business will *accept* calendar reform—that is another matter. The demand may be little but the need may be great. Speaking purely as a reporter, I may say that on the few occasions when the subject has come up for discussion in my presence, I have observed both in Europe and in America a lively eagerness for more information.

As to whether Business prefers a 13-month calendar or a revised 12-month calendar, I cannot venture to say. In Europe there seems to be small sympathy with the 13-month calendar. In America consideration of the revised 12-month plan has been largely precluded thus far by the aggressive sponsorship of the 13-month plan.

You have ably enumerated several disadvantages in the 13-month calendar, and I appreciate them. To me personally, however, the 13-month plan seems exclusively to offer Business one very attractive feature, namely, the coincidence of four weeks with one month. In corporation accounting this would simplify the reconciliation of weekly statements with monthly statements. For example, the distribution of wages is fairly simple when only four weekly time sheets have to be reckoned. Under any 12-month calendar, an extra time sheet has to be worked up as of some day in the middle of the week.

This is the only striking advantage of the 13-month calendar of which I am aware. I think it will win the favor of many accountants.

The claim that months of exactly four weeks are statistically comparable to one another is, of course, absurd. How can February with two holidays be compared absolutely with March, which has none? Certainly a given month can be compared absolutely with its corresponding month of another year, but that is so under any fixed calendar. Under any fixed calendar the months are relatively comparable. But under any fixed calendar certain ratios will have to be applied to make them absolutely comparable.

Up to this point, I have been speaking of Business with a capital "B." Under that designation one includes the extractive activities, such as farming; the convertive or manufacturing activities; the distributive activities; and the service activities such as banking, insurance, shoe-shining, etc.

But, in the economic sense, this constitutes only one-half of business (with a small "b"). The other half is *consuming,* the biggest economic activity of all, organized not into companies but by families and other alliances. Business is really everybody's business. Grandma buying a

bag of peppermints, Jack Tar getting a manicure, Gunga Din trading snakeskins for cotton cloth, are as much in business as U. S. Steel.

Now the minute you consider "business" from this view, the 13-month calendar shrivels up into a curious little theory from an academic museum. It simply doesn't belong.

Ask the corner groceryman what he thinks of the 13-month calendar and he'd say he'd never seen any. Try to introduce it into Morocco and you may have a revolution. Judging from the army intelligence tests, a very great sector of humanity lacks either the intelligence or the experience-with-intangible-conceptions to be able to understand a 13-month calendar.

On the other hand, the introduction of a revised 12-month calendar, such as The World Calendar, would pass unnoticed by most of the world. Indeed, newspaper readers sighting "February 30" might pause to reflect "It didn't use to be." Indeed, Year Day would be the occasion for special newspaper features. Indeed, Leap Day would be remarked as the day that used to be February 29. But the vast majority of people would soon forget that August once had 31 days. They'd be less conscious of the calendar than ever.

I can easily see why some accountants would like to have harmony of weeks and months. When it comes to wishing, however, I would not stop there. I would like to have the sun, the moon, the earth, and the Sabbath get together and straighten out their accounts. Meanwhile business as I understand it—the whole business of living—will be content with such conservative and practical readjustments as suggested by The World Calendar.

GERMANY FAVORS CHANGE

From The Omaha (Neb.) News

German business leaders are urging calendar reform as a helpful step toward world economic recovery. Italian bankers and industrialists oppose immediate consideration of a change on the ground that "the times are not ripe."

The whole subject receives international attention as a result of American proposals, inaugurated several years ago through the International Chamber of Commerce. The League of Nations will hear all views at Geneva in October.

Two alternative proposals will be considered—one providing for a 13-month year with each month containing 28 days, as advocated by George Eastman of Rochester; the other providing for a simplified and corrected 12-month year with each quarter containing 91 days, as supported in America by The World Calendar Association.

AS THE STOCKMAN SEES IT

By DAVID THIBAULT

Formerly Editor of "Modern Farming"

"AND LOT also, which went with Abram, had flocks, and herds, and tents. And the land was not able to bear them, that they might dwell together. And there was strife between the herdmen of Abram's cattle and the herdmen of Lot's cattle."

Since biblical times and for thousands of years before, the same problem has confronted the animal husbandman: How can I provide economical feed for my animals? In this quotation from Genesis the practical stockman recognizes a realistic and vivid portraiture of two pastoral cattle kings at war over grazing rights. Thousands of years later in our own western United States, bullets were sped and saddles emptied to settle precisely the same question. But whether the strife of primitive shepherds or recourse to firearms is employed in its solution, the fundamental problem of supplying fodder and feed is always paramount in the economy of producing domestic animals. Hence the vital tie-up between plant and animal production—between agronomy and animal husbandry.

In this article I hope to point out that calendar reform will be viewed by stockmen as the farmers view it. This can best be done by reviewing in some detail and with some attention to technical consideration, the reasons why the modern stockman is, basically, a "farmer." His business still revolves around the problem of providing feed for his animals; but his method of solving this problem has changed radically from that employed by Abram and Lot, or that employed by our western cattle kings. And in meeting this ancient problem in the newest way, he is even more dependent upon data kept by the aid of the calendar than is the farmer who deals with plants alone.

On the well-managed farm today there is no line drawn between animal and plant production insofar as the general economy of the enterprise is concerned. On the contrary, animal production is fitted in with field crop practices, and vice versa. With the passing of great areas of free pasturage and the coming of intensive, scientific methods, the modern agricultural enterprise insists more and more upon balanced production founded upon the profitable sale of products grown upon the farm, and upon maintenance of soil fertility through rational cropping and fertilizing of the land.

Into such a system animal husbandry fits with peculiar appropriateness. About 40 per cent of the organic matter fed to animals is returned

in manure. If this feed is produced upon the farm, and the manure and crop residue returned to the land, much of the fertility taken from the fields by the crops is returned. It is significant, too, that the classes of crops usually grown for supplying animals with roughage and grazing, are themselves beneficial to the soil. We find, then, that the farmer who keeps livestock and fits its production into his general operations, has a distinct advantage over his neighbor, similarly situated, who does not. And we find it equally true that the livestock producer who himself grows all or a greater part of the feeds for his animals upon his own land, has a like advantage over his competitor who must buy these feeds, thereby making a greater cash outlay, and sacrificing the advantages of a systematic rotation in which manure and crop residue increase the fertility and therefore the value of the land.

This being true, we readily see that the practical stockman's knowledge of crop production must be fully as complete, if perhaps not so comprehensive, as the farmer's. It is the poor farmer nowadays who is not also something of a stockman; and it is certainly the less efficient stockman who is not also a farmer. The use of the terms, "stockman" and "farmer" now usually indicates the preference of an individual for one phase of the same general enterprise, and not an actual separateness of effort. Similarly we have "trial lawyers" and "corporation lawyers" and doctors who are "internists" and "surgeons."

We may confidently expect the stockman—that is the farmer who specializes in livestock production—to hold the same views upon calendar reform which are held by his brother farmer who specializes in crop production. And there can be no doubt that the farmer, whatever his special field of effort, will favor that system of time reckoning which, while stabilizing and balancing the calendar, still preserves the 12-month year and effects reform without too radical departure from the present system under which he has accumulated his store of seasonal knowledge.

Perhaps more than the farmer who deals only with plants, must the stockman depend upon the correlation of data crystallized about the calendar. He must plant with a plan; he must breed with a plan. The planting and breeding plans must be reconciled. He must know local crops, and select from these the most economical for his particular enterprise. He must know at what stage of maturity these crops are best cut, grazed, or harvested, and to know this he must be familiar with the growing season of each. At what time of the year will such-and-such a crop reach optimum condition? At what age should his animals be to derive most profit from that particular crop at a particular stage of its growth? Spring pigs, for example, should be farrowed soon enough to go on the clover or other early grazing crop when it is ready for them. But if the pigs go onto the clover too soon, it may be injured, or the

grazing it affords may be exhausted before the next grazing crop—say soybeans, cowpeas, or peanuts—is ready for them.

These are a few of the many considerations which wrinkle the stockman's brow, and keep his eyes upon the calendar upon the wall, or the one within his brain. And these are the considerations which will keep him a conservative in the matter of calendar reform.

Proponents of the 13-month year calendar assert that their plan of calendar reformation will be a boon to stockmen because it will enable them more readily to compute the gestation periods of animals. In a booklet entitled "The 13-Month Calendar Pro and Con," sponsors for this radical revision take up the case of the livestock breeder in some detail. Since it is an unsurpassed instance of how impressive mere figures and superficial facts can be made to seem when they pass under the yoke of propaganda, the following quotation is submitted:

> "Periods of gestation of different farm animals reckoned in months of the present calendar are in odd fractions of months and for a given animal the period terminates on different dates in different months. This makes difficult a breeder's calculations. For most farm animals the periods are in multiples of weeks, so that in terms of months of the thirteen 28-day months calendar, the period is either an exact number of months, or an exact number plus simple quarterly fractions, and the date for foaling, calving, etc., is easily reckoned. For example, the mare is expected to foal 48 weeks after breeding, or exactly twelve 28-day months; this period in the present calendar is roughly 11 months, but 11 months may be 334 or 337 days. The gestation period of a cow is 40 weeks, or ten 28-day months; the sow 16 weeks or four months; the sheep and goat 21 weeks or 5¼ months."

After adding the gestation table figures for the eggs of chickens, geese, and turkeys, the writer closes the paragraph on the following lyrical note: "Thus, the farmer cannot turn around in his farm without finding an application of the calendar to his work, which the 13-month calendar would make simpler."

As I have endeavored to point out, the farmer and stockman are indeed dependent upon the calendar for the means of making seasonal comparisons of vital data. It is amazing to find, in a serious writing on calendar reform, such superficial treatment of this dependence. The passage would seem too trivial to merit consideration but for the possibility that some of those who do serious reading about calendar reform may be as ignorant of the real problems of the farmer and stockman as are some of those who do serious writing about the subject.

To begin with, the matter of reckoning the gestation period of animals is certainly one of the very least of the stockman's worries. First, because the calculations for the animals with which he works are as well known to him as the multiplication table is to a mathematician; and second, because one can find these tables in nearly any book on domestic animals, in any almanac, and in literally hundreds of agricultural and livestock bulletins. And, of course, if the animals under his care are valuable, or subject to registration, the stockman will carefully note the date upon which they are bred, and will fill in the probable date of the offspring's birth. There are printed forms supplied for these records, and often on these very forms the period of gestation for the animals under consideration is calculated.

But the full flavor of the passage quoted from "The 13-Month Calendar Pro and Con" will be savored by the practical stockman and breeder after he reads that, using the 12-month calendar, the farmer might be off his reckoning in the case of breeding mares because "11 months may be 334 or 337 days." Since the mare herself is very often off her reckoning *four to six weeks* the absurdity of this hair splitting is apparent.

Youatt, in his classical work, gives the gestation period for mares at 11 months, but found that it "diminished by 5 weeks or extended 6 weeks." M. Tessier of France gives us a report on 582 mares. The shortest period of gestation in this group was 287 days, the longest 419, and the average 330. William Russell Allen of Massachusetts kept records on 1,071 foals produced by trotting mares through a period of 15 years. He found the maximum gestation period 373 days, the minimum 319, and the average 340. Nor does Nature show unique caprice in the case of the horse. The period of gestation for the cow is usually given as 280 days. But at Cornell (New York State Experiment Station) records of 182 cows showed a range of from 264 to 296 days. Tessier found that ewes were subject to a range of 15 days in the period of gestation. Coburn, in "Swine In America," points out that young sows carry their pigs 100 to 108 days and old sows from 112 to 115, the average gestation period for all being 112 days. Spencer's findings in England substantially corroborate these figures.

With Nature herself so whimsical in the matter of meeting exactly the theoretical and average date for termination of pregnancy, it would seem that the breeder, even reckoning with the present imperfect calendar and missing his reckoning by three or four days, should feel no overweening need for so radical an innovation as a 13-month year calendar. And when we remember that the breeder is also a farmer, and that the lore and the science of his complex craft are bound up with the sun and the seasons, we can understand the objections he would advance to any

time reckoning system which would complicate his traditional and scientific records by interjection of a new month. His knowledge is an accretion built up through at least 6,000 years of experience with the primary components of the seasons such as warm rain, driving sleet, the return of spring, and autumn fruitfulness. The calendar was built around primitive husbandry in the time when the pars-pro-toto method of reckoning tied time measurement very tightly indeed to concrete seasonal phenomena. And the modern stockman inherits the superstitions, the wisdom, the first-hand knowledge of a long line of progenitors who understood that familiarity with grass, plants, seeds and grains, was vital to the success of animal husbandry.

In making the lambs, the calves, the pigs and the colts "meet the grass," and in planning interlocking crop and breeding schedules, one needs more than an inflexible method of reckoning periods of gestation—if indeed such a method were possible. When one gets down to primary things, when one deals with life in the making, one is in the presence of variables that simply will not fit into an artificial scheme.

But for human convenience an arbitrary calendar, rather than the primitive "time-indications" or pars-pro-toto system is essential. The present calendar is a "mighty mingling of the great and base." It seeks to reconcile three incommensurables—the solar year, lunar month, and the day. But with all of its faults it represents a working compromise. Any system that would disrupt the accumulated season-knowledge which husbandmen have built up through the ages, would certainly bring chaos. But a system which would retain the general features of the present system of reckoning, while stabilizing and balancing the calendar through natural and rational emphasis upon the quarters and the seasons of the year, would undoubtedly assist the stockman.

As has been pointed out in a previous article in the Journal of Calendar Reform, we who seek to simplify and stabilize time reckoning must give due consideration to the farmer, to the stockman, and to those in allied lines of animal husbandry and agriculture. These groups make up a considerable proportion of our population. Their needs must be sympathetically consulted if their co-operation is to be gained.

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STATISTICAL ADVANTAGES

By Clark Warburton

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SINCE the beginning of the Twentieth Century, and especially during the last decade, there has been a remarkable growth in the recorded and published quantitative information regarding the operation of our economic institutions. The most striking reminder of this growth is the fact that most of our statistical periodicals are of recent origin: the Federal Reserve Bulletin was first issued in 1915, the Review of Economic Statistics in 1919 and the Survey of Current Business in 1921.

A quarter of a century ago only a few statistical series were published weekly or monthly; now the Survey of Current Business publishes every month about two thousand statistical series, all referring to the economic life of the United States. These series cover the production, sales, shipments and prices of hundreds of commodities, as well as data regarding construction and building operations, business profits and dividends, employment and labor earnings, banking and financial operations.

Nor is the growth of statistical information confined to recent years or to the United States. As economists have extended their studies of the secular trends and cyclical and other fluctuations of business and industry, they have gone through newspapers and business records, collecting data for decades past, until now there are available indexes of such business phenomena as industrial production, check payments, speculation, interest rates, wage rates, real wages and the cost of living—all connecting present-day records with those of a half century or more ago.

In other countries there are not so many series regularly published as in the United States, but a glance at the foreign statistical annuals and statistical reviews is sufficient to reveal their very large number. The writer of this article has made no count, but he believes that 25,000 would be a reasonable rough guess of the number of statistical series of business and economic phenomena published monthly throughout the world.

Not only has the past quarter of a century been one of extraordinary progress in the gathering and publishing of statistics; much energy has also been devoted to statistical analyses, especially in the field of business fluctuations. To these analyses the current business depression has given an additional impetus, so that the next five years are likely to see as many publications devoted to these problems as the past two decades. Such studies are, furthermore, of the greatest importance to our economic life, for upon them depends the possibility of gaining sufficient understanding of the causes of business fluctuations to permit the stabilization of busi-

ness and the elimination of the direful effects of business depressions. In view of the profound importance of the publication of statistical series and of statistical analyses, it is appropriate to consider the effect upon them of calendar reform. There are two ways in which these statistical series and analyses will be affected by a reform of the calendar: first by reducing or increasing the time involved in tabulating statistics and analyzing them; and second, by increasing or decreasing the usefulness of the analyses to business men, scientists and government officials.

Let us then consider some of the proposed changes in the calendar in respect to possible economies of time and in respect to the usefulness of statistical investigations. One of the simplest of the proposals regarding calendar reform, that of making February the same length as the rest of the months, and of assigning one 31-day month to each quarter, can be unqualifiedly approved. The false seasonal variation created in many series by a short month is a nuisance and an abomination without justification.

Whether, however, calendar reform should involve divisions of the year into thirteen months of four weeks each, as in the International Fixed Calendar, is more debatable. In its favor is the convenience and economy of totaling four weekly items, as compared with the difficulty of keeping both weekly and monthly totals from daily records, or of prorating some weekly data to obtain monthly totals. This is a real convenience in the case of those statistical series compiled from reports of business concerns which for their own use keep both weekly and monthly records, as well as in the cases where both weekly and monthly reports are published. That this economy is great is proved by the fact that a few business concerns have adopted the thirteen-month calendar in their accounting systems. This convenience, however, is offset by the inconvenience of compiling quarterly and half-yearly data, and by the inconvenience of preparing thirteen instead of twelve monthly reports per year. Only the business concerns adopting the thirteen-month calendar can tell us, after they have used that calendar for some time, on which side lies the net advantage to business accountants and executives.

But from the point of view of economists and statisticians I believe the advantage lies definitely with the twelve-month year. This is because nearly all economic studies, especially those dealing with business fluctuations, are based upon the month as the time unit, and the quarter is used more often than the week. The length of time between peaks and valleys, between upturns and downturns in some series as compared with other series and other time relations, are usually given in months, or if smaller units are desired, in fractions of a month. Seasonal fluctuations are commonly studied by months, and the functional relations established between various statistical series are nearly always based on monthly data. While in some cases weekly data have to be prorated in order to

obtain these monthly figures, about 90 per cent of the statistical series currently published are already in monthly instead of weekly form. These proratings are probably not so important, so far as economic investigations are concerned, as the necessary proratings of monthly data into quarterly and half-yearly totals under the thirteen-month plan.

If convenience of compilation of business records for the use of business executives and economists were the chief element to be taken into consideration in calendar reform, there are more radical changes than the thirteen-month year which should be considered. Thus a ten-month year, each month consisting of six weeks of six days each, or of four weeks of nine days each, with a five-day holiday season at the end of the year, during which industrial activities were all reduced to the utmost possible extent, would have all the advantages of the thirteen-month year, and many others due to the reduction in the number of monthly reports.

Convenience of compilation, however, is less important in economic investigations than usefulness of the results of the investigations. This is the respect in which the adoption of a thirteen or a ten-month calendar would be distinctly disadvantageous. For the adoption of a thirteen or a ten-month calendar would delay the application of the knowledge gained from all the investigations of the past two decades. Seasonal fluctuations would all have to be re-calculated. It would be impossible to compare current statistics with those of corresponding months or seasons or recent years, or to compare readily the sequence of events in the current business situation with similar periods of business activity or depression in the past.

To re-compute the numerous indexes of prices, industrial production and other phases of economic activity would be a costly procedure justified only by definite and great advantages. In the case of many of the statistical series linking the present with the past, it would be impossible to convert the records of the past into a form comparable with the present.

The next few years are certain to be critical years in the world's history. Economic changes are extremely rapid. Economic systems are challenging each other. There is great uncertainty. Popular clamor has begun for economic stabilization, for reform of the capitalist system so as to provide continuous and adequate incomes for wage-earners, and for the future development of productive facilities in accord with a national plan based on the needs and desires of the people.

To meet this demand for business stabilization and for national economic planning it is essential that economists and business men have during the next few years all the aid possible from past business records. A radical change in the calendar would seriously reduce the usefulness of these records and thus hamper the adjustment of business to world needs at a crucial time in the advance of civilization.

SEEKING A WORKABLE SYSTEM

By William Henry Blood, Jr.

Vice-President, Stone and Webster Engineering Corporation

One of the leading electrical engineers of the country, Mr. Blood has been president of the National Electric Association, the Electric Vehicle Association, and the National Conference for Standardizing Electrical Rules. He is a lecturer on Public Utilities at Harvard and a fellow of the American Institute of Electrical Engineers. The following article is reprinted in a somewhat condensed form from the Stone and Webster Journal for June, 1931.

CALENDARS are used for the measurement of time. Many have been made, changed, and discarded. The Moon Calendars were among the earliest and consisted of twelve months of thirty days each or 360 days in a year. The early Egyptians discovered an error in the calculations and lengthened the year to 365 days, retaining the twelve months, but adding the five extra days at the end of the year for religous festivals.

Julius Caesar initiated a calendar reform and made the year 365 days and six hours with a leap year of 366 days every four years. This Julian calendar was adopted by the Romans in 46 B. C. but the 7-day week was not established until the fourth century. On the death of Julius Caesar his successor, Augustus Caesar, persuaded the Roman Senate in 8 B. C. to recast the calendar. To accomplish this end, the twenty-ninth of February (it had 30 days under the Julian leap year) was taken away and added to the month Sextilis, which was renamed August. Then, to avoid three successive months of 31 days each, the thirty-first days of the odd months of September and November were taken away and given to the even months of October and December. This unreasonable irregularity has come down to us through the centuries.

With the passing of time it was discovered that the year consisting of 365 days and six hours was longer than the solar years by eleven minutes and fourteen seconds, and it was generally recognized that this mistake should be corrected. Pope Gregory XIII, with the advice of prominent astronomers, mathematicians, and churchmen of the day, adopted a reform in 1582 A. D., more than sixteen hundred years after Julius Caesar had instituted his famous calendar. The Gregorian calendar, as it was known, included the following essential points: Easter remained an acknowledged Christian holiday, but was not given a regular date for its annual observance; leap year was rectified, and three out of every four centurial years were ordered to be common years, the Centurial leap years being only those which were divisible by 400 without leaving a fraction,

for example, 2000 A. D.; the Solar Year of 365 days, 5 hours, 49 minutes and 12 seconds was adopted. To make this reform effective, ten days had to be discarded. The beginning of the year, January 1, was retained.

It is the Gregorian calendar, with its annoying irregularities, that an attempt is being made to correct so that we may have a more workable system of time-measurement to meet the world's requirements.

Some 200 different schemes of calendar reform have been proposed, many being minor variations of a few general types with a considerable number of worthless or impracticable suggestions. Consideration has now been centered on two well worked out plans, each of which adopts 364 days as the basis for the calendar and treats the 365th day as a "Special Day" or as a "Double Saturday." They are designated as the International Fixed Calendar and The World Calendar.

INTERNATIONAL FIXED CALENDAR

January	February	March
April	May	June
Leap Day, June 29		
	Sol	
July	August	September
October	November	December
Year Day, December 29		

With the International Fixed Calendar the year is divided into thirteen months, each having 28 days, which provides for 364 days of the year. A new month, the thirteenth month, to be known as "Sol," would take care of the 28 days which must be rearranged. It would be intercalated in midsummer between June and July. The 365th day of the year is called Year Day and would be inserted at the end of December. The 366th day of Leap Year, which comes every four years, is to be known as Leap Day and would be intercalated between June and Sol.

THE WORLD CALENDAR

January	February	March
April	May	June
Leap Day, the second Saturday June 30		
July	August	September
October	November	December
Year Day, the second Saturday December 30		

The World Calendar retains the 12 months but is slightly revised. The year would consist of equal halves and quarters, containing the 364 days of the year. The quarters of the year consist of three months each, the first month having 31 days, and the other two months 30 days each. In

every quarter the first month begins with the first day of the week, Sunday; the second day or middle month commences on the middle day of the week, Wednesday; while the third or last month always starts on Friday. Each month has 26 week days. The 365th day of the year is to be called Year Day, and would be intercalated between December and January, while the 366th day of Leap Year, known as Leap Day, would be intercalated every four years between June and July.

Changes suggested by The World Calendar are few and easy of adoption. It also provides a year which is susceptible of being divided into halves and quarters without splitting the months, and by thus equalizing the halves and quarters the difficulties encountered in business enterprises and statistical comparisons would be greatly decreased and the labor lightened.

This matter of Calendar Reform will come up for discussion at the next General Conference of Communication and Transit of the League of Nations, which is scheduled to meet in Geneva on October 26. It is believed that at that time definite action will be taken on the question of the reformation of the calendar for world use and it is hoped by many, notwithstanding the very short time for its consideration, that calendar reform can be accomplished by 1933 when the chosen calendar plan could be put into universal operation, beginning with Sunday, January 1. Should this date be too early for the adoption of a new calendar, then the next probable date would be January 1, 1939, which again falls on Sunday.

Any agreement on calendar reform made by the General Conference of Communications and Transit of the League of Nations will probably take the form of a treaty. This treaty, after ratification by the different governments, would then become a law of every country, which law would provide for the conversion of all dates necessary in the change from the old to the new calendar.

Before any ratification by the United States Senate takes place every citizen should have a voice in settling this question. This may be accomplished through a national referendum, the ultimate decision by the people then becoming the law of the land. The matter should have intelligent consideration, for the decision has far reaching effects.

INTERCALARY DAYS

By N. C. Abbott

President Nebraska State Historical Society

THERE is a group of words given in the authorized dictionaries that have a common origin. They are "intercalary," "intercalate," "intercalation" and "intercalative." Adjective, verb and noun, each is derived from the Latin verb "intercalare." The original meaning relates to a scheme in connection with the old Roman or Numan calendar and is translated to "call between."

Associated with the English words mentioned above are two others which the reader would do well to have in mind during the next year when calendar discussions will be general. They are "extra-calation" and "ex-calation." The first I find in an *Encyclopædia Britannica* article and the second I have coined myself. They are almost self-explanatory—respectively an addition at the close and a subtraction of a day or days.

Intercalary days were those added by the Pontifex Maximus or Roman High Priest, between established points already determined upon. After these *called-between* days had passed they were counted as dead and gone. They did not affect the reckoning or the dating.

The best illustration I can give of the attitude of these early Romans to the intercalated days is an old story of a hungry boy. He had fifteen friends invited to his party. An hour before the time of assembly there was a regret. When the host's mother came in to reset the table by eliminating one place, she found the work already done—refreshments and one place gone. Her son explained that he had eaten the absentee's quota "so as to make things come out even."

Now the illustration is not exact, though it helps to an understanding of what was done in Rome. The Chief Priest put in a day or more, without counting them as a part of the month—to make things come out even. What he had to do was to get the 25th day of March and the Spring Equinox to coincide.

For those who have not studied the calendar particularly, perhaps the ancient plan of intercalating and excalating may be suggested in what is done at the International Date Line constantly. Outward bound toward the Orient, a skipper jumps from Tuesday to Thursday, or misses entirely some other day in the week. Homeward bound he has a first and a second Tuesday, or some other week day repeated to square accounts.

May I stop to ask parenthetically: Is not this a most wise provision? For many years it has seemed to me that the various units for measuring time, even the calendar itself, should minister to man's needs. Let the

Calendar, worked out by man as his instrument, continue as a real servant. Never let it make mankind the serf.

It is probable that Numa got his idea of twelve standard months from Egypt, where such a year had been the basis of computation for at least 2000 years and perhaps for 3500 years. It is easy for us to understand this Egyptian annual measurement. Lost in the midst of antiquity the people along the life-giving Nile began to note that its annual rise corresponded closely with the heliacal rising of the star known by us as Sirius, by them as Sothis. So they began their year with this rising. (Heliacal rising means the first appearance shortly before sunrise of a star that has been invisible for some time.) Before this observation they had used the moon as a measuring device, accepting 30 days as a standard month.

What happened then was this: They ran through the twelve months (originally known by numbers, but later acquiring names from phenomena regularly recurring). At the end of twelve months they waited patiently for Sothis to rise, meanwhile letting the days slide by. The extra days were termed "days additional to the year"—and numbered five. Given over to religious observances, in beseeching the heavenly powers to grant the Nile dwellers bountiful crops, these days appear to me rather as truly extracalated than intercalated. No account was taken of the quarter day that the calendrical year was short of the real solar year, so that the two years coincided exactly only once in every 1460 years.

The lunar-solar calendar of Numa could not be made as simple as the Egyptian for two reasons: Because of the effort to harmonize sun and moon units, and because the Romans had three monthly focal points instead of one. To explain further: The Egyptians gave up the actual length of the lunar month and standardized on thirty days. The Romans vacillated between 29 and 30 days and had to use an extra month, Mercedonius, every other year, in order to catch up with the sun.

The difference between the Egyptian one-focal point and the Latin three-focal points is characteristic of a mental trait. The Egyptian had this point, the first day of the month, in mind always, so that he always could designate his date as the first, or so many days after the first. This day on which I write would be, therefore, as in our reckoning, the eighth day of the sixth month, looking backward to the first day when the sixth month began.

But the Romans chose three different focal points, as I have remarked, to which they did not look backward after their passage, but toward which they looked forward. Or, in other words, the Egyptians and we, in the matter of calendar reckoning, are a present- and past-minded folk, while the Latins were a present- and future-minded people. (This forward-looking attitude of the Roman mind is just as apparent in their letter writing, a matter that generally confuses young students of Latin. The

writer projects himself over to the time when his letter will be read by the addressee.)

The focal points chosen by the Romans were termed *Calendæ, Nonæ,* and *Idus* (translated, *Calends, Nones,* and *Ides*). The words carry the connotations respectively of the calling of the new moon or first day, by the pagan high priest; the first quarter of the moon, standardized at the fifth in a short month and the seventh in a long month; and the full moon, arbitrarily fixed finally at the 13th in a short month and the 15th of a long month.

Under this scheme June 8 becomes the sixth day before the Sextilian Ides. One notes that these focal points are the nouns and the monthly designations are grammatically proper adjectives.

Such was the Numan Scheme, which the Keeper of the Calendar was supposed to arrange for moving properly at such a pace that every second year March 25 would fall at the spring equinox.

On the first of each month the Pontifex Maximus, originally in person, later by proxy, went out in front of his temple and announced that a new month was beginning. If he received word later from the astronomers that the sun had not reached the point it should have reached, and he wanted things to balance up at the end, he would announce enough extra days, not to be counted in the month, so that the Calendar might catch up.

Past reforms of the calendar have been effected by individual men, acting with arbitrary power in temporal capacity, but having primacy also along sacerdotal lines. Each clerical leader has had himself as lay leader to carry out the reform decided upon.

Conditions now are vastly changed. A reform in the calendar must be effected through concerted action of the leading nations of the world. It must come after due consideration by the international clearing house, the League of Nations. The machinery for consulting religious opinion must be set up by the League, and this, in fact, will be one of the chief duties of the forthcoming October conference at Geneva.

The present religious objections to calendar reform center mostly against the use of a day proposed at the end of December each year, "epagomenal" in nature, and another about the middle of each leap year, which will be "intercalary." (I am using the terms strictly here: an intercalary day comes in the middle of the year; epagomenal days fill out the quota, as in the Greek, Egyptian and French revolutionary calendars.)

For instance, THE WORLD CALENDAR, which has a large following in America, advocates quarters of equal length, arranged thus: January, 31 days; February, 30; March, 30. A total of 91 days. Four of these quarters would add up to 364 days. So the last week of each ordinary year is given an eighth day; and June, of leap year, would also have an additional day and an eight-day week.

INTERNATIONAL VIEWPOINTS

An Address at the League of Nations by Elisabeth Achelis, President of The World Calendar Association, June 9, 1931

IT IS a great privilege to attend these meetings of the Preparatory Committee, and to find such keen interest everywhere in the subject of calendar reform.

All of us who are working in this cause have begun to feel, I think, that simplification of the calendar is a duty which we owe to posterity. We are not planning this change because of the benefits that it will bring to us or to our contemporaries, but rather for future generations and in fact for all time to come. The old calendar is inconsistent with the new age which is being born into this old world. The old calendar is ill adapted to the needs of the next generation, which must live and move and have its being in the midst of surroundings even more practical, more exact and more scientifically precise than those in which we have lived.

There is no dispute as to the defects of the present calendar. There is no real difference of opinion as to the need of rectifying them. Some observers think that the time is not yet ripe, and there are various convictions as to the best method of rectification. But we are all agreed as to the fundamental desirability of change.

I have the honor to represent The World Calendar Association of the United States, which has been making an earnest study of the calendar situation since its organization last autumn.

Our attention was drawn to this subject by the earnest and painstaking work of Mr. Eastman and his associates. Their energy and enthusiasm has been an example and an inspiration to all reformers. Mr. Eastman's leadership has aroused universal interest, calling attention to the defects of the calendar and to the impelling need for improvement. The persistence and zeal of Dr. Marvin, Mr. Cotsworth, Colonel Solbert, Mr. Stiles and others is also appreciated and gratefully acknowledged. Without their consistent and loyal efforts for improvement in the calendar this movement would not have advanced so far.

From the beginning of our study on this question, however, we became convinced that the thirteen-month plan, which these gentlemen have so ably advocated, was too extreme and unnecessarily disturbing for general acceptance in America. The World Calendar Association was organized to advance a more moderate plan, an improved twelve-month year of equal-quarter divisions, which would have a better chance of adoption among all peoples; the conservatives as well as the progressives.

Since the incorporation of this association we have approached about

100,000 Americans in various fields of activity—transportation, journalism, agriculture, commerce, finance, religion, education and science. Within the past three months more than 2500 persons have joined our membership, whose steady growth is an indication of an encouraging and widespread interest in the calendar.

Among our more recent activities to determine how far the twelve-month calendar was favored in the United States, we issued a questionnaire to the entire membership of a typical American chamber of commerce, that located in Wilmington, Delaware, which has 1200 members. With the full cooperation of the officers of this chamber, we invited their opinion on calendar reform. We took the greatest care that each member was precisely informed.* The proposed thirteen-month revision was placed before them as presented by its advocates, and on a parallel page was shown the arrangement of an improved twelve-month year, The World Calendar.

The result, we believe, gives a fair test of the present opinion of American business. It shows the following percentages:

Business men opposed to calendar reform 32.3 per cent.
Business men favoring 13-month calendar 30.3 per cent.
Business men favoring 12-month calendar 37.4 per cent.

You will note the significance of these percentages. A clear majority, nearly 68 per cent, expressed themselves in favor of calendar reform. The minority who oppose all calendar change are perhaps mostly people who are not yet fully informed of the situation and its need. The eventual proportion of those who will continue to oppose all calendar reform will be very small, we believe.

As to the majority who favor calendar reform, it is interesting to note that considerably more than half of those who replied gave their approval to the twelve-month revision. There is no reason to suppose that this statistical proportion in favor of the twelve-month plan will not be found approximately correct for any similar cross section of American business opinion.

I may say in passing that this result differs considerably from that of the questionnaires reported by the Eastman Committee. But this difference is mainly due to the fact that the twelve-month plan presented by the Eastman Committee in its questionnaires was a particularly bad example of a twelve-month revision and probably not clearly understood by most of those who answered.

American advocates of the thirteen-month plan lay great stress on the

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*The text of the questionnaire submitted to members of the Wilmington Chamber of Commerce was as follows: "Are you in favor of calendar reform? (Answer yes or no)..... If so, do you favor the 13-month calendar plan or the retention of a 12-month calendar, improved? (Answer with numerals 12 or 13)..... Would the correction of calendar irregularities, in your opinion, be a help or an economy to business? (Answer yes or no)..... Remarks..... (Name)....."

fact that 140 business concerns are using a thirteen-month system of twenty-eight days for their own business accounting. When one considers the active propaganda that has been so ably carried on by the Eastman Committee for several years in an effort to secure the adoption of a thirteen-month calendar, it is amazing that the result is not greater. We are told that the total of 140 American firms is less than 1/50th of 1 per cent of all business concerns in America. This is so small a proportion that it indicates a majority of business firms are at least indifferent to the thirteen-month arrangement.

In our correspondence with various European groups we have found the same intelligent interest in the whole subject of calendar reform as in America. It has seemed to us that European opinion was concentrating around the twelve-month plan. The Swiss Committee, for example, has stood squarely in favor of a plan of this kind, and a similar attitude was evidenced to us by important groups in Germany, Italy and Belgium.

Great Britain has not shown any indifference, but conservative British opinion has voiced an opposition to the thirteen-month plan that has seemed considerably stronger than any corresponding advocacy of the twelve-month alternative. France, according to our correspondents, cannot hope to get any real popular support for so radical a change as the thirteen-month plan, but may consent to a twelve-month revision, which our correspondents believe would pass almost unnoticed.

From our studies both in the United States and in Europe, we have been led to the conclusion that it would be better for all national groups and committees to concentrate their efforts on the twelve-month plan on the ground that this plan would everywhere be more acceptable and would stand a better chance of success.

As a representative of The World Calendar Association, I regret exceedingly that the Swiss Committee is unable to be present at these hearings for I am sure they would have presented their twelve-month plan ably and well. The great value of their plan, as reported December, 1930, and that of The World Calendar, both of which are alike in their equal quarter-year arrangement, lies in their simplicity and efficiency. I shall outline briefly the outstanding advantages gained by the acceptance of this type of an equal quarter-year proposal:

The revised twelve-month year becomes the equal multiple of halves and quarters, thirds and sixths; it is regular in arrangement and stabilized; the even quarters conform as they do now to the seasons, recognizing natural laws; every month has the same number of twenty-six week days; comparisons are easily obtained; changes involved require a minimum of adjustment; expenses are not increased for business and the consumer; religious and secular holidays are stabilized; and the transition from the old to the new order is made easy by the retention of the twelve-month year.

Only seven days are changed; and dates, anniversaries and records of various descriptions call for no alterations in the dates between September 1st and February 28th, while in the other six months the readjustments are so slight that they would practically pass unnoticed by people everywhere.

The equal quarter periods of the year consist of 91 days, 13 weeks or three months, of which the first month in each quarter has 31 days and the remaining two 30 days each. The unequal quarter-divisions of the present Gregorian calendar, which vary between 90 and 92 days, are thereby corrected. This improvement, we believe, will meet with world-wide approval. The inauguration of the odd 365th Year Day and the extra 366th Leap Day insures a yearly regularity and makes possible a perpetual calendar.

The World Calendar considers the year as the central point of the calendar. The year-cycle ends its annual round with Year Day, the old December 31st, and begins its new one on Sunday, January 1st, about the same time that the earth commences her next revolution around the sun. This brilliant orb in the heavens, and not man, is the direct cause of the vagaries of the odd day and the extra day within the annual and leap year circuits of the yearly cycles. The week and month are sub-divisions of the year. Every common year has its definite 52 weeks plus one day, and by retaining its twelve-month structure, a four-quarter year is easily related to the four seasons. With this method in use, the year, the twelve months and the seven-day weeks, begin their annual round simultaneously.

The two intercalary days, Year Day and Leap Day, are given a position in the week, placed on double Saturdays and tabulated the second Saturday December 30th, and the second Saturday June 30th. This, of course, is provisional. If the Committee prefers a more specific terminology, the odd 365th day might be called "Sylvester" and dated December S, while the 366th day every leap year might be named "Bissextile" and dated June B. These days could also be considered as international holidays. By inserting these days between weeks, the seventh day in the week and the sequence of days within every week are respected. The year always begins on the first day of the week, Sunday, January 1st, and the last half of the year in leap years always commences on Sunday, July 1st. It is obvious, I think, that when a day is given its place in the week and month and a name, a blank day or "dies non" does not exist. The introduction of a double day in the reformed calendar is scientifically sound. It can be likened to that extra day which travelers add to their account when, bound for the Americas from the Orient, they cross the International Line on the Pacific.

We have noticed with interest and pleasure that the stabilizing of Easter is one of the main objectives of calendar reform. In America

we have found both religious and secular opinion favorable to giving Easter a regular date. Sunday, April 8th, which comes nearest to the historical date, seems the logical choice, but should this date prove too unseasonable for countries located in northern latitudes then Sunday, April 22nd, might be selected. As the 15th of a month is frequently associated with mid-monthly financial settlements, Sunday, April 15th, does not appear, to The World Calendar Association, to be as acceptable.

In our studies into religious opinion in the United States we have found that liberal religious groups welcome a reasonable and logical method of calendar reform. There exists, however, in the United States as in Europe, a considerable number of people who are disturbed by the use of the so-called intercalary days, Year Day and Leap Day, which they regard as creating an eight-day week every year, thereby breaking into the succession of weeks.

Personally I have deep sympathy with the religious convictions of these objectors, although I cannot subscribe to their tenets. I wish they could be brought to realize that in the fourth period of creation the sun, the moon and the stars and the division of the seasons, the years and the days took place, while in the seventh period, a day of rest was established. Few religious leaders have claimed with authority that successive weeks are of greater importance than a correct astronomical year. With an equal regard for both these periods of creation rather than an over-emphasis of the seventh-day period, a possible solution of the present problem may be found.

All progressive reforms call for conciliations, and adjustments are inevitable when old theories are replaced by new interpretations gained by an increase in knowledge.

Religion is perhaps more closely affected by calendar reform than any other living force, but it has always been able to find a way to meet the changes which progress demanded. Religion, like peoples and nations, has often sacrificed cherished tradition at the call of a world-wide need.

Within the last century religion has had other problems to solve in connection with time-measurement. There were conscientious religious objectors to daylight saving time, and about 50 years ago in the United States, similar critics crusaded intensely against the adoption of standard time. In both these instances the storm was weathered and the objections eventually forgotten, without doing serious harm to religious sentiment.

AT THE LEAGUE OF NATIONS

By Elisabeth Achelis and Charles D. Morris

As delegates of The World Calendar Association, Miss Achelis and Mr. Morris attended the June meeting called by the League of Nations for a preliminary study of calendar reform. During sessions, which lasted a week, a "Preparatory Committee" of 14 experts from all parts of the world went over the reports submitted by national committees and other bodies interested in this subject, summarizing and assembling this material as the basis for the deliberations of the formal International Conference in October.

WE found at Geneva a sincere and serious interest in the subject of calendar reform, and an obvious desire on the part of the League of Nations to give a sympathetic hearing to every phase of opinion, both pro and con. The League made its first recommendation in favor of a new calendar in 1923, and since that time it has gone forward, deliberately and painstakingly, in the study and advocacy of this reform. Wisely the League has shown no wish to move with undue haste in a matter which so vitally affects the daily life of every nation and people. Even today, after eight years, it feels keenly the necessity of building up in most countries a more lively understanding of the problem, before it makes a binding commitment either for or against any of the suggested schemes for altering the present system.

The preliminary studies of the past eight years have convinced the League secretariat that in advocating calendar reform they are undertaking an important work for the good of the world. But these studies have also shown that the effort to correct the present irregular and unsatisfactory calendar and to substitute one which is regular, stable and comparable in its arrangement, calls for the most careful and comprehensive study, research and deliberation.

More than 200 different plans of calendar simplification have been submitted to the League. The June meeting of the Preparatory Committee rejected most of these as unpractical, and gave main consideration to two perpetual plans—the 12-month "equal quarters" revision as endorsed by Switzerland and advocated by The World Calendar Association, and the 13-month scheme as proposed by Moses B. Cotsworth and George Eastman.

These two plans, therefore, will be the ones on which attention will be focussed in October at the formal International Conference called by the League's Commission on Communications and Transit.

A conspicuous feature of the June preparatory meeting was the role played by the United States in the deliberations. Six delegates from

America were in Geneva, three of them representing the 12-month plan and three representing the 13-month proposal. Dr. Charles F. Marvin, head of the U. S. Weather Bureau and an ardent 13-month supporter, was one of the 14 experts summoned by the League to act on the official Preparatory Committee, and after the public sittings had closed he was made chairman of a sub-committee to draft the report of the week's sessions. We feel sure from our pleasant contacts with Dr. Marvin during the conference that he made a sincere and whole-hearted effort to maintain an impartial and judicial attitude.

Nevertheless, it was fortunate that the United States was adequately represented on the side of a 12-month revision, for the facts and figures which we presented made it clear to the League secretariat that the United States is by no means unanimous for the Eastman-Cotsworth scheme.

The report of the Preparatory Committee, in summarizing public opinion in 16 countries, does not indicate any preponderance of world-wide support for the 13-month proposal. The findings are based on reports received mainly from questionnaires, which were sent out in most cases to limited lists by "national committees" of unofficial character; the results, therefore, are generally no more "nationally" authoritative than those reported by the American Committee, which is headed by Mr. Eastman and composed almost entirely of supporters of the 13-month plan.

Taking these 16 reports, however, at their face value, it is interesting to note that only 6 of them favor the 13-month scheme. Belgium and Switzerland definitely endorse the 12-month revision, and Germany, Italy, Holland, Argentine and Hungary indicate a preference for the 12-month plan, but believe the time is not yet opportune for definite decision. The British Committee makes an extended report which commits its authors to nothing, and there are similarly inconclusive reports from Sweden and Colombia.*

The 6 endorsers of the 13-month plan are: Czecho-Slovakia, France, Poland, Portugal, Brazil and the Eastman committee from the United States. The Brazilian report is oddly qualified as largely influenced by a traditional loyalty to Comte, a French savant who campaigned for the 13-month plan 50 years ago. The French report admits a woeful lack of information on the subject in France and urges an effective educational program in order to enlighten the public before any decision is reached. The Eastman report from the United States is the result of many years of energetic advocacy of the Cotsworth plan.

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*The report from Colombia, although omitted in the printed report of the League Preparatory Committee, was included in an earlier "Summary" issued in mimeograph by the committee. It is in the form of a letter from the Ministry of Foreign Affairs, stating: "The Ministry hopes to receive further documents on these subjects in order that it may be enabled to form a clear idea as to the convenience, utility and expediency of this reform, of which it is not as yet convinced either from the economic or from the social standpoint. It is of opinion that any simplification in these matters, if inadequately considered, might produce results entirely contrary from every point of view to those desired."

Our own presentation of the 12-month revision was made on the second day of the conference. Although we had already submitted formal reports of our activities to the Preparatory Committee in writing, we felt that it was wise to supplement these with a verbal summary of our findings regarding public opinion in America. We had found, through questionnaires, correspondence and other investigations of varied character, that there was a widespread support in America for an equal-quarter plan, possible only with a 12-month arrangement, and an equally widespread opposition to the 13-month proposal. The reception which we received from the Preparatory Committee and from the League secretariat confirmed our conviction that personal representation was a necessary and effective method of bringing the American situation to their attention.

The Committee's public hearing was held on Tuesday, June 9, presided over by M. Djouritchitch, chairman of the Preparatory Committee and representative of Yugoslavia. He had the capable assistance, at his side, of M. Robert Haas, permanent secretary of the League Commission on Communications and Transit, and Miss Key-Rasmussen, associate of M. Haas.

The morning session was devoted mainly to religious opposition to calendar reform as presented by the Grand Rabbis of several countries and by spokesmen for the Seventh-Day Adventists. Their objections centered around the annual introduction of the last day in the year as an extra day and another extra day in leap years, outside the weekday sequence, which they opposed as breaking into the traditional regularity of their Sabbath. Members of the Preparatory Committee listened patiently and sympathetically to these speakers, although it had already been made clear that the League for the present desired to consider only the economic and social phases of the subject, leaving religious arguments to religous authorities. Four venerable Rabbis spoke with intense conviction and deep emotion, and two younger Adventists talked along similar lines. All those present felt a profound respect for their evident sincerity of purpose.

Religious support of calendar reform was voiced by Prof. Adolf Keller of Switzerland, who spoke as the Secretary General of the Universal Christian Council for Life and Work, embracing most of the Protestant denominations of the world. He endorsed the League's plan for a stabilized Easter and indicated that his organization would not oppose any calendar simplification that would serve the good of humanity.*

The afternoon session was given over to a description of three plans of calendar reform. The 12-month revision was discussed by the President

*The World Calendar Association would like to stress the fact that if Easter is to be stabilized, yet separated from a general calendar reform, and if the calendar is not perpetual, the Easter-date will still "wander." Its "wanderings," however, will be restricted within a seven-day period.

of The World Calendar Association, the 13-month scheme by Mr. Cotsworth, and a novel 10-month arrangement by Broughton Richmond of Singapore.

Mr. Richmond's division of the year into "quintals" or fifths, and all the complicated adjustments which this would necessitate, left his hearers puzzled. Fortunately typewritten copies of his address were available for the use of those who wished to study his plan.

Mr. Cotsworth's presentation of the 13-month scheme was lengthy, and he quoted extensively from pamphlets and articles published by his organization. His address was complicated by his desire to make reply to the rabbinical speakers of the morning session.

The address in advocacy of the 12-month revision by the President of The World Calendar Association is printed in full in this issue of the JOURNAL. It had the earnest attention of the Committee, whose members were particularly impressed with the results of the Wilmington Chamber of Commerce questionnaire as indicating that business opinion in America was more favorable to the 12-month plan than to the 13-month proposal.

With the close of the June meeting, there seemed to be no doubt in the minds of those who had attended these interesting sessions in Geneva that calendar reform was making progress in all parts of the world. The gathering of delegates from so many countries naturally emphasized the magnitude of any international undertaking for improvement in the present system, but there was a manifest spirit of cooperation which gave a distinct feeling of hopefulness.

There are, of course, difficulties to be overcome, for any important change in the calendar will call for changes and adjustments in governmental, social and religious life. This, however, has been the history of every great calendar reform. When the Julian system was adopted by the Romans, the public had to adapt itself to alterations in many traditions and customs, holidays and anniversaries, but the benefits proved worth all they cost in sacrifice. Fifteen hundred years later, Pope Gregory XIII corrected the Julian errors, and there was another period of adjustment, complicated by religious controversy which restrained Protestant countries from accepting the Gregorian reforms for many generations. The improvement, however, eventually won on its merits and religious objections disappeared. During recent years the Chinese, Japanese, Greeks and Turks have made various sacrifices in their adoption of the western calendar, but the change has been fully justified.

The arguments of the Jewish Rabbis and their supporters from the Seventh-Day Adventists left a profound impression on their hearers at Geneva. While other religious groups have indicated willingness to support the "Year Day" and "Leap Day" which are required by all systems of

calendar reform in order to make the calendar perpetual, these two groups stand in opposition, at least for the time being.

But in the atmosphere of Geneva, it seems easy to believe that progress is inevitable. There is a lofty detachment in this "city of the League" that makes it easy to look back over history and realize that the old is ever yielding to the new, alike in government, economics and religion. When one contemplates the lives of the great religious leaders of the world from early history—Moses, Zoroaster, Buddha, Confucius, Jesus, Mohammed—one is impressed with the fact that they never hesitated to renounce old traditions, if thereby greater benefits could be secured for the good of man. They gave new interpretations to life and its needs and accepted change, all of which were inevitable in the forward-going march of progress. It is this spirit of progress which will steadily work to smooth out the objections of those who bring up religious obstacles to calendar reform.

Students of the calendar recognize and accept the year as the central unit of time-measurement with the week and month as subordinate. In accordance with this interpretation, the current proposals for reform supply the only means whereby the calendar can become perpetual, at the same time coinciding with a true astronomical year. These proposals favor a calendar of 364 days with the 365th day placed on a double Saturday or eighth day and the 366th day in leap years placed on another double Saturday, preferably in mid-summer. In this way every year begins on the same day and date and the calendar becomes regular, orderly and comparable.

The question before the world today is this: Shall this change be made and this new interpretation be accepted so that man can use an all-round, universally workable calendar in his daily activities and social relationships?

Under the clear blue skies of Geneva, guided by leaders of the past and present, the answer seems very obvious. Calendar reform is another forward step in the progress of human life. Cooperation, international, secular and religious, is easier today than it was 350 years ago in the days of Pope Gregory.

OFFICIAL REPORT

of the League of Nations Preparatory Committee on Calendar Reform

Summing up the findings of the "Preparatory Committee" which met at Geneva in June to pave the way for the General Conference called by the League of Nations in October, the League has issued a "Green Book" of 28 pages, which is available to all students of calendar reform at 30 cents a copy, through the Publications Department of the League of Nations, Geneva. The following article includes the more salient features of this report. Attention is particularly called to the suggestions made for procedure at the October General Conference, with which the report closes.

THE COUNCIL of the League of Nations has placed on the agenda of the fourth General Conference on Communications and Transit the following question: *Examination of the Expediency from an Economic and Social Standpoint: (a) Of fixing movable feasts; (b) Of simplifying the Gregorian calendar.*

To assist the Conference in its work, the Advisory and Technical Committee appointed this Committee with instructions to draw up a general report summarizing the results of the inquiries made in the several countries into the problems submitted to the Conference, specifying the questions which the Conference would have to discuss and placing before it, as regards both its procedure and the actual subjects submitted for discussion, any suggestions that might facilitate its work.

As the Governments invited to the Conference are aware, questions relating to calendar reform have already been reported on by a Special Committee which was of opinion that, before there could be any international examination of the question, it was necessary to institute a more complete inquiry among representatives of the various interests concerned within the individual countries. For this reason national committees or unofficial committees of inquiry, consisting of persons representative of various interests, have been constituted in the majority of countries.

The Preparatory Committee sat at Geneva from June 8 to 13, under the chairmanship of M. Djouritchitch, former Director-General of the Yugoslav State Railways. At their own request the following gave evidence: Chief Rabbi Israel Levi, President of the Israelite Committee concerning the Reform of the Calendar; Dr. Hertz, Chief Rabbi of the United Hebrew Congregations of the British Empire; Rev. Dr. M. Hyamson, President of the League for Safeguarding the Fixity of the Sabbath; Dr. Pinchas Kohn, delegate of the "Agudas Jisroël"; Dr. F. Lewenstein, Chief Rabbi, Zurich; Professor Adolf Keller, Secretary-General of the Ecumenical Council for Practical Christianism; A. S. Maxwell, L. H. Christian and Dr. J. Nussbaum, nominated by the General Conference of the Seventh-Day Ad-

ventists; Miss Achelis, President of The World Calendar Association; Broughton Richmond, Secretary of the International Calendar Association; Moses B. Cotsworth, of the International Fixed Calendar League.

The Committee felt that, as its members did not represent the Governments of their respective countries and did not look upon themselves as the spokesmen of the whole public opinion of those countries, it could not possibly express any preference or offer any opinion on such problems as may become controversial in the Conference. The delegates at the latter are alone competent to express with authority the views of the nations which they represent. The Committee held that this report should merely put before the Conference a systematic summary of the questions with which the latter would have to deal and the ideas advanced, more particularly in the report of national committees on those questions, and submit any suggestions the Committee might think desirable as to the Conference's procedure.

FIXATION OF EASTER

Disadvantages of the non-fixity of Easter and other movable feasts. The date of Easter varies at present between March 22 and April 25. This causes many inconveniences. School, university and judicial work and commercial interests, including those relating to transport, are particularly affected. The beginning of the scholastic year and some of its holidays are fixed, whereas others are movable. The same disadvantages apply to the judicial, administrative, industrial or popular holidays. Many commercial transactions and the transport services connected with them are severally prejudiced by the changing date of Easter; in particular, business dealing with textiles, articles of fashion and the hotel industry.

While the Special Committee felt that no decision on what is essentially a religous question was practicable without an agreement among the various high religious authorities concerned, it suggested that Easter should be fixed for the Sunday following the second Saturday in April. Naturally, if the question of Easter is separated from that of establishing a perpetual calendar, the term "fixing" in the strict sense of the word could not be applied to the reform scheme; the expression "stabilization" is the only correct term, because, if the calendar is not perpetual and if, as is almost universally considered, Easter must fall on a Sunday, its dates will unavoidably oscillate within a seven-day period.

Certain Governments stated that in their view, the principle of fixity or stabilization was entirely a matter for the religious authorities to decide. General demand for the stabilization of Easter is found in the reports received from most national committees.

The majority of the Christian churches have declared their willingness to accept the stabilization of the date of Easter on condition that such a

step should simultaneously be accepted by all the churches. The Holy See emphasized that it did not think it possible, without very serious reasons, to depart from a time-honored religious tradition, but agreed that if it were demonstrated that the fixing of Easter would be universally beneficial it was ready to submit the question to an Ecumenical Council.

In order to meet the views of the Holy See, the object of the Conference, so far as the stabilization of Easter is concerned, would be to ascertain whether the Governments represented consider, from a purely civil point of view, that, in the words of the letter from the Holy See, the stabilization of the date of Easter is or is not "demanded by the general good."

GENERAL CALENDAR REFORM

Defects of the Present Calendar. The divisions of the year, the months, quarters and half-years, are of unequal length. The months contain from 28 to 31 days. As a result, the number of days in the quarters are respectively 90 (91 in a leap year), 91, 92 and 92. The first-half year, therefore, contains two or three days less than the second. Months, quarters and half-years do not consist of a whole number of weeks. The weeks are usually split at the beginning and end of months, quarters, half-years and years. The unequal length of months, quarters and half-years is a cause of confusion and uncertainty in economic relations, in the arrangement of all statistics and especially statistics concerning trade.

The fact that the months contain 28, 29, 30 or 31 days is responsible for the fact that all calculations of salaries, interest, insurance, pensions, leases and rent which are fixed on a monthly, quarterly, or half-yearly basis are inaccurate and do not correspond with one-twelfth, one-quarter or half of the year. In order to make daily calculations in current accounts with comparative certainty and speed, banks are obliged to make constant use of special tables. Moreover, in most of the countries of Europe, the unequal length of the months has led financial concerns to calculate deposit and current accounts on the basis of a year of twelve months of thirty days, or a year of 360 days, whereas in the discounting of bills the year is still reckoned at its exact number of days. Finally, the months, quarters and half-years do not contain an exact number of weeks.

The Calendar is not perpetual; it changes each year. The year, in fact, consists of 52 weeks plus one or two days. Thus, if the first day of the year is a Sunday, in the following year it is a Monday (or even a Tuesday in the case of a leap year). Were it not for the extra day of leap year the calendar would only have seven different alternatives corresponding to the seven days of the week on which the year can begin; owing, however, to the extra day of the leap year, the exact reproduction of the calendar of any year only takes place once every 28 years. Thus, the day of the month falls each year on a different day of the week from the previous year.

The dates of periodical events can never be fixed with precision. Such a date can, in fact, only be determined in two ways—either by the day of the month (August 13th for example) or by the day of the week in the month (the third Tuesday in October). With the present Gregorian calendar, this double method is not precise, for, if the day of the month is fixed for periodical events, this day may sometimes fall on a Sunday or general holiday. Each year, therefore, the authorities have to make a special decision, as for instance, for the meeting of a tribunal, the convocation of Parliament, the dates of holidays, fairs, markets, administrative assemblies, the fixing of summertime, etc. On the other hand, if a special day (the first Monday in the month, for example) is fixed for these events, other difficulties arise, as the date corresponding to this day varies continually from month to month and from year to year. If the calendar were perpetual, the dates of these events could be fixed once for all. They would fall on the same dates as well as on the same days of the week.

The position of the weeks in the quarters varies each year—that is to say, the weeks overlap the divisions of a year in a different way each time, and complications accordingly arise in the reckoning of accounts, statistics, etc. The first, fifteenth or last days of a month are sometimes Sundays. When the first of a month falls on a Sunday, it is not possible to revise and verify immediately all the work of the previous months and quarters and to establish without delay the various comparisons which are essential from a business point of view. This is a serious disadvantage in respect of accounts and statistics. The fifteenth and the last day of the month are very important dates as regards the falling due and the payment of rents. When these dates are Sundays, the payments must be postponed or advanced. Finally—and this is perhaps the greatest drawback from a statistical and commercial point of view—since the various days of the week are not of the same value as regards the volume of trade, and the years and the months do not from year to year include the same number of individual weekdays, there can be no genuine statistical comparison between one year and another, while the various subdivisions of the year itself—half-years, quarters and months—are likewise incapable of comparison.

SCHEMES OF REFORM

Equalization of Quarters without establishing a Perpetual Calendar. In order to remedy, to a certain extent, the inequality in the length of the divisions of the year, without, however, instituting an unchanging calendar, it was proposed simply to carry out an approximate equalization of the quarters. Each quarter would consist of two months of 30 days each and one month of 31 days and one of the quarters would include a "supplementary" day. A less perfect and still simpler reform of this kind was proposed. It was suggested that the 31st day of August should be trans-

ferred to the end of February of the following year. The only question which has been raised, is whether their advantages would justify a change.

Perpetual Calendar involving 364 *Days, plus one "Supplementary" Day, two in Leap Years.* As already explained, the reason why the calendar is not perpetual is that a year consists of 52 weeks plus 1 day (or 2 days in leap year). This difficulty could be remedied by reducing ordinary years to 364 days and adding a "supplementary" week in certain years; but such a calendar—proposed by certain representatives of religious authorities opposed to a break in the continuity of the week—would, in the opinion of the Committee, be inferior to the existing calendar and cannot be considered at all. Any scheme of reform instituting a perpetual calendar without changing the length of the Gregorian year thus necessarily means that one day in the year (or two in leap years) must be regarded as "supplementary." The "supplementary" day which would be added annually to the days of the 52 weeks might be inserted at the end of the year (December 31st, if the 12-month year were kept, when quarters would be 31, 30 and 30 days long respectively, or December 29th, if 13 months of 28 days were adopted. The "supplementary" day in leap years would be inserted at a date to be selected).

Eliminating any scheme which changes the beginning of the year or divides the year into months of considerably different length, the Special Committee and National Committees, in considering calendar proposals involving the introduction of a "supplementary" day or days, devoted their consideration exclusively to the two following plans of reform: (1) Thirteen Months of 28 days; (2) Twelve Months each containing 30 or 31 days.

STATE OF PUBLIC OPINION

The following is a summary of public opinion in the several countries so far as it can be collected from the reports of National Committees. In some cases the opinion recorded is that of particular circles or interests rather than that of the public at large.

The disadvantages of the existing calendar are not disputed in any report. The reports of the Committees of Belgium, Brazil, Czechoslovakia, France, Germany, Poland, Portugal, Switzerland and the United States think the establishment of a perpetual calendar desirable. The Committees of Hungary, Italy and the Netherlands declare themselves opposed to a perpetual calendar involving introduction of "supplementary" days.

Opposition to the introduction of "supplementary" days was particularly marked in the case of two religious confessions, whose representatives were heard by the Preparatory Committee—viz., the Jews and the Seventh Day Adventists. These communities consider that this reform would result in serious drawbacks from the economic and social points of view. The Jewish religious authorities, for example, although keeping for relig-

ious purposes a separate calendar of their own and believing that the Sabbath should always be celebrated on the seventh days of each week in uninterrupted succession, the disturbance made in the regular cycle of weeks by the introduction of one or two "supplementary" days would have the result that the Sabbath would no longer always coincide with the Saturday of the civil calendar, as is the case at present, but would have to be celebrated in turn on different days of the week.

Advocates of the institution of a perpetual calendar, on the other hand, urge that the drawbacks from the economic and social points of view which would be suffered by a minority as a result of the reform, should not prevail against the advantages which such a reform might have for a large majority. They also pointed out that, in their opinion, the fears expressed above were perhaps exaggerated; that, for example, in the case of the Jews, the obligation of school attendance on Saturdays, which at present exists in a certain number of countries, has not given rise to any protest on the part of the Jews in these countries.

The two plans of reform implying the principle of the introduction of "supplementary" days have met with a reception in the different countries which may be described as follows:

Thirteen Months of Twenty-Eight Days. In the United States of America the inquiries conducted by the National Committee elicited a majority of replies in favor of this plan. The Committee observed that a considerable number of commercial and industrial undertakings in the United States and other countries used auxiliary calendars to remedy the drawbacks of the present calendar and that in most cases these calendars divided the year into thirteen months of 28 days. The French Committee expressed its preference for a total reconstruction of the Gregorian calendar and the adoption of a thirteen-month calendar. The Portuguese Committee has declared in favor of a year of thirteen months. The same applies to the Committees of Poland and Czechoslovakia. The Polish Committee expressed the opinion that the advantages of this plan would justify the sacrifices which large masses of the population opposed to reform would be called upon to make. The Brazilian National Committee declared itself in favor of this plan, which conforms to the tradition of Auguste Comte—who, in 1849, proposed his historical calendar of 13 months of 28 days—which tradition is particularly alive in Brazil.

Twelve Months of 30 *or* 31 *Days each.* The German Committee noted that, in Germany, the greater part of the replies given in the course of its investigations were in favor of this proposal. The Belgian Committee also supports this plan. The Swiss Committee proposes that the year should consist of twelve months divided into four quarters, the first three of 91 days (31, 30, 30) and the last of 92 days (by the insertion of one "supplementary" day) ; the 365th day of the year would follow December

30th and would be called Silvester; the leap year day would follow June 30th and the year would always begin on Sunday, January 1st.

PROCEDURE FOR FORTHCOMING CONFERENCE

The Preparatory Committee considers that, in examining problems which have rarely been the subject of official international discussion, and are thus likely to be of a somewhat delicate nature, it would be expedient for the Conference to sit in committee from the outset for the examination of certain questions. The discussions would be freer, and the opinions expressed would not bind the Governments immediately.

The results of the discussions in committee would then be communicated to the Conference at a plenary meeting, and at the second stage the latter might with advantage set up a small committee to consider the points on which an agreement could be reached between the Governments and the form which it might take.

The question of the economic and social aspects of the stabilization of Easter and the question of the economic and social aspects of the general reform of the calendar, should be examined separately and consecutively.

As regards general reform of the calendar, it might perhaps be advisable to discuss the following points separately and in turn: (1) drawbacks of the present calendar; (2) principle of the establishment of a perpetual calendar and the respective merits of the perpetual calendar and of the calendar simply involving the equalization of the quarters, without the introduction of "supplementary" days; (3) respective advantages and inconveniences of the two definite plans for a perpetual calendar—i.e., a year of thirteen months and a year of twelve months.

It would also be advantageous for the Conference, during its discussions, to distinguish between two groups of questions—namely, those relating to the desirability of the reform of the calendar either in general or according to some particular plan, and those concerning the possibility of the immediate introduction of the reform.

At the conclusion of its work, the Conference will have to consider what action could be taken on the results of its discussions as regards decisions within the competence of the religious authorities. In accordance with the decision of the Council of the League, the religious authorities concerned will have the right to be represented at the Conference by observers. It would, nevertheless, be useful if the Conference could make suggestions as to the manner in which the observations or decisions of the religious authorities concerned might be transmitted to Governments, in order that the competent organs of the League might assist the Governments, immediately upon receipt of communications from the religious authorities, to take such action as, from a non-religious point of view, may be involved by the decisions of the Conference.

FROM THE MAILBAG

I am very much interested in calendar reform and heartily believe in it—H. L. BATES, Dean, Pacific University, Tower Grove, Ore.

If we are to have any calendar reform, and to my mind it is very much needed, then this arrangement is certainly the one, as it accomplishes practically every desired end with a minimum of changes and objections. — WM. HOWARD CLAPP, Professor, California Institute of Technology, Pasadena.

I have always regarded tampering with the calendar as the height of something or other by international busybodies, comparable only to world-wide prohibition and peace fanaticism, but I do believe that the suggested revised 12-month calendar has unusual merit in that it offers all the advantages of a needed revision without undue deviation from established custom.—JAY G. CARPENTER, Editor, Glendale, Ore.

The calendar reform proposed by the Association is extremely simple, and the policy well planned. — REGINALD W. BROWN, Librarian, Bryn Athyn, Pa.

I have been partial to the idea of a 12-month year with 8 months of 4 weeks each and 4 months of 5 weeks each. Your Journal has converted me to the plan you advocate.—ISAAC E. HIRSCH, Publisher, Pittsburgh, Pa.

It seems to me we are not up to date if we do not deal with time in a rational, logical and commonsense way. It is high time that the calendar was overhauled, reconstituted, amended and revised. Civilization demands it.—E. K. ROSSITER, Architect, New York City.

I like your 12-month reformed calendar better than the 13-month. Will help all I can.—G. W. MINKLER, Civil Engineer, Vancouver.

I am greatly in favor of the adoption of The World Calendar and will be glad to assist in any way.—CLINTON R. WHITE, Owner Radio Station WCRW, Embassy Hotel, Chicago.

I think your plan is better than the 13th month idea.—DR. C. C. PIERCE, U. S. Public Health Service, Washington.

Change to The World Calendar would be painless, making for simplicity in calculations and efficiency in operations. Daylight Saving is something else—an endless confusion: the new calendar would be a permanent thing.—EDWARD H. MARKISON, Chicago.

Reform of the calendar is made a prime necessity by the increasing complexities of our modern civilization.—FRANKLIN H. WENTWORTH, Managing Director, National Fire Protection Association, Boston.

It is inevitable that some such revision as you suggest should take place.—ELIZABETH M. DONALDSON, Editor *Whip and Spur*, St. Louis, Mo.

The World Calendar, to my mind, is the only practical method. It is economical when compared with the 13-month calendar.—JOHN ALBERT DAVIS, JR., Radio Tube Manufacturer, Beverly, Mass.

Until I read in the Journal of Calendar Reform how The World Calendar operates, I did not understand it and favored the 13-month Calendar. I now realize the superior advantages of the proposed calendar and think its general acceptance will be easily secured.—B. E. Eaton, President Mississippi Power Co., Gulfport, Miss.

Your Journal of Calendar Reform presents logical common sense.—T. H. TULLY, Sales Executive, Chicago.

A practical thing to do.—WM. P. LYONS, Banker, Kansas City, Mo.

The 12-month revision appeals to me much stronger than the 13-month plan. —L. H. JONES, Chairman of the Board, Grace Harbor Lumber Co., Detroit.

Having read several articles on this subject, I am an enthusiastic supporter of the change.—WALTER BOTTHOF, President Standard Rate and Data Service, Chicago.

I like your plan of a 12-month calendar better than anything yet proposed. The uniform 26 working days each month is

one of its best features. The whole plan is so simple that any one can understand it.—WHITMAN DAVIS, Librarian, University of Mississippi.

In my opinion, the 12-month plan offered by this Association is superior to the 13-month plan. The quarterly division of the year will create balanced seasons—which is desirable for farmers.—RUDOLPH KUNC, Farmer, Chardon, Ohio.

Universal adoption of The World Calendar will be a boon to the accountant, a help to the traffic man and will save the poor farmer many an hour of mental cudgeling. I heartily approve.—H. M. SHANNON, R. R. Traffic Manager, Southport, N. C.

Maximum simplification of the ever-increasing complexities of all human endeavor will result from the immediate universal adoption of this rational calendar reform.—HUGH H. HARTLEY, Librarian, U. S. Coast and Geodetic Survey, Washington.

I am in favor of the new proposed calendar of twelve months and think it's a splendid arrangement. Never did think anything of the thirteen-month proposition.—F. M. JACKSON, Banker, Birmingham, Ala.

Congratulations on the excellence of your Journal, and best wishes for the success of your efforts. Yours is a sane proposal, which has a real possibility of being adopted. I will give what help I can here.—CARL REINHARDT, Mining Engineer, Cobalt, Ont.

Each step that tends to bring the world together as a unit is welcomed. I shall only be too glad to aid The World Calendar.—MARY ELIZABETH KITCHEN, Librarian, Enid, Okla.

I am heartily in favor of the change to the new calendar. Will be pleased to aid with facilities of W. B. O. W.—NOEL C. RUDDELL, Manager Radio Station WBOW, Terre Haute, Ind.

I have received the June, 1931, Journal of Calendar Reform, and its plan appeals to me as entirely workable. I hope that it will be adopted universally. —GEORGE W. YORK, Editor, *Bees and Honey*, Alhambra, Cal.

I have charge of making schedules for courses and for hours of recitation, including the yearly calendar. The World Calendar would solve the yearly schedule problem and fix uniform summer and Christmas vacation periods, which under our present calendar are variable with resulting trouble.—EDWARD R. CARY, Professor, Rensselaer Polytechnic Institute, Troy, N. Y.

Your plan is the best of various ones proposed. Thirteen months a year is too great an objection to be overcome.—E. P. LAKIMAN, Editor, Haleyville, Ala.

Very much in sympathy with your plan for World Calendar instead of the 13-month plan.—FRANK B. MCMILLIN, Manufacturer, Mount Gilead, Ohio.

We badly need a new calendar.—JOHN H. PENNOCK, Printer, Nash, Okla.

I very much hope that your plan will go through. Regardless of its merits, I consider that the 13-month plan involves such drastic changes as to render its acceptance wholly impossible. Your plan is better and much more practical.—HAROLD WORDEN WYLIE, Clergyman, Clinton, N. Y.

There would be several advantages to labor in having an equal number of working days in each month.—FLOYD PARKE, Printer, Cedar Rapids, Iowa.

The World Calendar as proposed would simplify all labor, business and social schedules. It's coming.—I. C. DAVIDSON, Editor, Carthage, Ill.

Your plan is easily the most feasible I have yet seen. Speaking from the agricultural depths, I would say it is possible to start it working in 1933.—YORK SAMPSON, Publisher, Viborg, S. D.

The time has come for a change in our present calendar, and The World Calendar is preferable to any other. Less disturbance would be caused by the proposed World Calendar than by any other plan submitted.—WM. EBEN MCCORMICK, Editor, Denver.

Your proposed calendar is the best solution I have seen offered for a highly complicated problem.—R. E. MAGILL, Publisher "Southern Presbyterian," Richmond, Va.

EXCERPTS AND REVIEWS

Revision Urged

(From The American Accountant, April, 1931)

A proposal for revision of the calendar is being placed before citizens of the United States by The World Calendar Association. Several advantages are claimed for it over the international fixed calendar plan of dividing the year into thirteen months. The proposal of The World Calendar Association is that the year be divided into twelve months, of which eight shall be of 30 days and four of 31, with one extra day to be known as Year Day, following December 30.

Literature which is being circulated by The World Calendar Association includes this statement: "Until The World Calendar plan was presented, only one proposal had been offered in any adequate and efficient way for consideration by citizens of the United States; this was the International Fixed Calendar, which advocates a thirteen-month year. The association believes this proposal is too radical for international adoption and offers in its place a rearranged twelve-month calendar, known as The World Calendar. The idea embodied in this plan is by no means new; the quarter-divisions of the year have been known for centuries, but only now have they been considered in a practical arrangement."

The World Calendar Association refers to a growing need for calendar revision because of existing annoying irregularities of time calculation which, it is believed, have a hampering effect on progress.

The first edition of a pamphlet entitled "The World Calendar," by Elisabeth Achelis, consisted of 30,000 copies, which were published in November, 1930. A second edition, of 60,000 copies, was published in March, 1931. The World Calendar is a revised twelve-month calendar. It is pointed out that the year would consist of equal halves and quarters, containing 364 days of the year. Each quarter would consist of three months, the first having 31 days and the second and third, 30 days each.

In each quarter the first month would begin on the first day of the week—Sunday; the second month on the middle day of the week—Wednesday; and the third month on Friday.

Each month would have 26 week days. The 31-day month, which would start off each quarter, would have five Sundays and no more week days than the 30-day months which follow.

The 365th day would be called Year Day and would follow the last day in December. In leap years a Leap Day would follow the last day in June.

"We believe," as stated in the pamphlet, "the transition from the old calendar to this plan when adopted would be easier, more agreeable, and less confusing."

Religious Viewpoints

(From Tidings of Zion, April, 1931)

Our present calendar is so irregular, the League of Nations has called an International Conference, for the autumn of this year, for the purpose of adopting a world calendar, uniform and fixed, so that the same calendar will do for every year. It is hoped that a calendar can be devised which will be adopted by all nations.

There are two main plans for a fixed and uniform calendar. The International Fixed Calendar provides for a year of 13 months of 28 days each. The World Calendar provides for a fixed calendar of 12 months, each month to have 30 days except the first month of each quarter, which would have 31 days.

The International Fixed Calendar of 13 months is more simple and uniform than The World Calendar, as the same calendar would do for every month; but it is so radical a change from a year of 12 months, it is probable that The World Calendar will be preferred, as it provides for a year of 12 months without any very radical changes from our present calendar.

One serious objection to a 13 month calendar is the fact that the odd month would make difficult the division of the year into regular halves and quarters.

Neither does a 13 month calendar conform to the four seasons of the year. A 13 month calendar would lead to increased work in sending out monthly statements, paying monthly bills, insurance premiums, monthly salaries, and so on. The number 13 cannot be divided into equal parts. Many people have a superstitious fear of the number 13, but there would be a Friday the 13th every month in the International Calendar. In that calendar the 1st and 15th of each month would always fall on Sunday, yet most bills fall due on these dates. This would happen during only four months of the year with The World Calendar. The International Calendar would require a readjustment of all leases, contracts, wages, and so on; but The World Calendar would lead to no radical changes. The International Calendar would require 337 changes from the present calendar, and only 28 days would remain unchanged. The World Calendar would require the change of only seven days. In both calendars there would be a holiday not included in the calendar at the end of each year, and in leap year another intercalated, or "blank" day, which would fall at the end of June.

Costly Irregularity

(From the Erie Railroad Magazine, May, 1931)

Next fall the League of Nations is going to tackle the calendar. There has been so much talk of the costly irregularities and inadequacies of the present calendar that the League has decided to give the calendar fixers a hearing.

The plan which best meets all the needs of the situation without any upsetting innovations is an American plan, backed by The World Calendar Association. It holds to 12 months, but readjusts the length of various months so that each month has exactly the same number of working days. Under this system, January, April, July and October would be 31-day months; all the other months would have 30 days each. Each quarter-year would contain exactly 91 days. At the end of the fourth quarter, the 365th day of the year would become a new holiday, recorded as a double Saturday, immediately preceding New Year's Day. This device enables every year forevermore to begin on Sunday, and thus any given day of the year will always come on the same day of the week.

Thirteen months in a year is pretty difficult to imagine or believe in. It seems to offer insuperable obstacles and difficulties. Incidentally, the plan unhappily makes the 13th day of the month come on Friday, and this happens 13 times every year, which is more than any mildly superstitious human being could stomach!

But the so-called World Calendar plan, with its orderly procession of 12 simplified months, will undoubtedly win many friends through the simplicity with which it meets the situation. It leaves us still on familiar ground. It recognizes our same old 12 months, our familiar four seasons.

Perhaps best of all, from the railroad viewpoint, reform brings important holidays permanently around to Monday, so that they become welcome week-end periods of rest and recreation, without interfering at all with the continuity of the working week. It fixes Easter on April 8, and eliminates for all time the present wandering Easter, which has been the despair of generations of transportation men.

In the Business World

(From Lang's Monthly, London, May, 1931)

That our calendar is prehistoric and totally unsuitable to the needs of today is admitted everywhere. No one moves to change it, yet everyone wants it to be changed. The position is very similar to that which existed when "summer time" was first discussed. It was declared to be impracticable, to be a defiance of the Almighty. Indeed, in many parts of Ireland today they still talk of "English time" and "God's time." So fixed do we become in our ideas.

The League of Nations is toying with what it calls an international calendar, an utterly impracticable thing of thirteen months, perhaps astronomically correct, but having no regard to the needs of the people. The charm of "summer time" is that it is so simple, and this also is the appeal which is made by The World Calendar.

JOURNAL OF CALENDAR REFORM

EDITORS

CHARLES D. MORRIS CARL LIDDLE

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ELISABETH ACHELIS, *President*

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A MOVEMENT which would influence large masses of humanity must have principle and plan; but not less essential are broad policies that transcend the immediate plan, and tolerance so zealously fostered that it in itself becomes a principle. Thus is attracted the best thought of both supporters and opponents. But hasty claims to perfection and dogmatic inflexibility repel the waverer who might become a friend, confirm the hostility of the opposition, and subvert the loyalty of adherents.

With these fundamentals of human association in view, the Journal of Calendar Reform seeks diligently for the fresh viewpoint—for the suggestions which may be evolved by untrammeled consideration and discussion.

The Journal does not assume that The World Calendar plan which it sponsors is perfect; nor does it affirm that it is the best which the mind of man shall devise. It does believe that up to now the 12-month equal-quarters calendar offers more stability and simplification, with less of radical innovation, than does any other plan for calendar reform. And certainly the plan does less violence to religious, social and economic traditions and observances. No compromise, no lack of conviction is implicit in this tolerant outlook. In stating it we merely concede human fallibility and admit that future generations may improve upon the work which antiquity began, which Caesar wrought into coherence and workability, which Pope Gregory XIII made more effective, and which we, in turn, would improve further. There is honor and dignity in carrying on such illustrious traditions.

We view calendar reform as a logical step which the present-day world must take in fulfillment of the heritage of progress bequeathed it by religious, scientific and political leaders of the past. And holding this view, we cannot assume an arbitrary and dogmatic stand upon a subject of such wide human appeal. With no remission of our own sincerity we must, nevertheless, recognize the sincerity of the convictions of others. There is no higher presumption than an attempt to help mankind without consulting mankind. "To live alone," says Aristotle, "one must be either an animal or a god."

CURRENT PRESS COMMENT

Least Revolutionary

Meriden (Kan.) Message

More than 200 different proposals for calendar reform have been presented for consideration at Geneva; of these only a few appear practicable. The World Calendar is the best we have seen; it is the least revolutionary, it leaves the twelve-month year intact, equalizes the working months, provides for suitable fixation of legal and popular holidays, simplifies accounting and other office processes, furnishes a logically patterned and easily memorized calendar which would be permanent. Its adoption could offend only two persons in the world, so far as we can see—the person who thinks that the present calendar or some element of it was made by the Lord, and the person who worships the God of things as they are.

Propose New Calendar

Chester (Ill.) Press

Need of reform of our present jumbled and cumbersome calendar has long been felt in business circles and numerous substitutes have been offered. The latest, and seemingly the most logical, comes from The World Calendar Association, which sets forth its proposed new calendar in the Journal of Calendar Reform.

The new arrangement, called The World Calendar, keeps the old twelve months scheme and it is so composed as to be perpetual in form.

Changing Customs

Florida Times-Union

"Reform of the present chaotic calendar has made notable strides in recent years," according to the Cincinnati Enquirer, "especially since the League of Nations has focussed all efforts in a single direction and made possible the full exchange of views." The newspaper admits, however, that the popular acceptance of the idea of calendar change has advanced slowly. This is thought to be because the majority of plans proposed have advocated radical changes that appear unlikely to be understood for a long time by any great number of people. The Enquirer believes that the prospects of early calendar reform are becoming much better, therefore, as many of the propagandist groups are concentrating their effort on a moderate change.

In a publication called Journal of Calendar Reform, issued by The World Calendar Reform Association, Inc., of New York, an entertaining article by Prof. Bristow Adams, of Cornell University, treats of "popular acceptance" and at least to a degree explains why the people generally will be pleased if some of the many annoyances and inequalities of the present calendar are done away with. Taking as introductory the proposition of every business man having to carry a different time table for every day of the month, it is demonstrated that a great amount of time is lost through the necessary calculations for practically every detail.

Changes Inevitable

Journal of Marking Devices

It will no doubt be of considerable interest to American manufacturers to know that calendar changes are now considered inevitable by well-informed students of international opinion in Geneva.

Monday Holidays

Hawthorne (N. J.) Press

All reformers agree upon the advisability of placing holidays on Monday as far as may be possible. Two great advantages are gained thereby: first, it is conceded to be a great economic saving, and, second, it is recognized as being of great benefit to mankind.

Familiar Seasons

Byron (Calif.) Times

Although most people are unaware of the fact, more than 200 different proposals for calendar reform are under consideration at Geneva. The World Calendar will probably be adopted because it recognizes our twelve months and familiar seasons, readjusting only the length of various months so that each has exactly the same number of working days.

MEMBERS OF THE WORLD CALENDAR ASSOCIATION

485 Madison Avenue, New York City

Membership is based on an active interest in the study of an adequate and effective improvement of the calendar. Owing to lack of space, a large number of names have been omitted. They will be printed in future issues.

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